



## PROGRAMMABLE LOGIC CONTROLLERS MODULAR TRAINER



**DL 2110-131K  
(without PLC)**

**PLC options:  
DL 2110-131K-MTB  
DL 2110-131K-AB  
DL 2110-131K-1200**

This modular trainer allows the study of the PLC and HMI. The modular frame is a tubular steel structure, treated with electrostatic painting. It has 4 lines for manual and fast fixation of the modules without the need for tools. All terminals and connection points are available through 2 or 4 mm. terminals (according to the voltage). The components, as well as their terminals and access points, are identified with the respective symbol printed in silk-screen.

- PLC module: MITSUBISHI Fx1n series or Allen-Bradley(AB) Micro830 series or Siemens S7-1200 series or Siemens S7-200 series.
- PLC developing software can run on following operation system: Windows XP, Windows 7 or Windows 8.
- 7 inch HMI. Resolution: 800x480, 16bit colour, touch screen: 4 wires.
- Input power module, with protection switch and lights.  
Power supply: single-phase from mains.
- Power supply module with polarity inversion and over-current protection.  
Outputs: 12 Vdc, 24 Vdc and  $0 \div 10$  Vdc.
- Module with switches for digital input signals simulation. It includes 8 fixed contact switches with retention, NC/NO, for simulating the logic levels.
- Module with switches for digital input signals simulation. It includes 8 contact pulse switches, NC/NO.
- Module with switches for digital input signals simulation. It includes 4 contact pulse switches, NC/NO and 4 contact retention switches, NC/NO.
- Module with 8 led for light indication of output digital signals, suitable for PLC with NPN or PNP outputs.
- Module with 2 linear potentiometers for simulation of voltage or current signals (4 to 20 mA and 0 to 12 Vdc).
- Module for analogue signals measurement. Possibility to measure 2 signals simultaneously. One of the inputs is suitable for current signals from 4 to 20 mA and the other for voltage signals from 0 to 10 Vdc.
- Module with step motor, with 4 bit electronic driver, with light indication for each bit.
- Module with 4 relays for 10 A and 24 Vdc coil, suitable for PLC with NPN or PNP outputs.
- Module with DC motor and encoder, suitable for PLC with NPN or PNP inputs.
- Module with Analogue/Digital converter, 8 bits A/D converter, with analogue signals input from 0 to 10 Vdc or from 4 to 20 mA.
- Module for Digital/Analogue converter, 8 bits D/A converter, with maximum analogue output signals adjustable from 0 to 10 Vdc or from 4 to 20 mA.

Supplied with a set of 30 connection cables, 2 and 4 mm, and an experiment manual.